at least one other contact on said user card for receiving a signal that is not associated with said first communication protocol; and

means associated with said microprocessor for determining whether said signal is present at said other contact, and for causing said microprocessor to operate in accordance with said first protocol when said signal is not present, and to cause said microprocessor to operate in accordance with a second, different protocol when said signal is present.

30.   The user card of claim 29, wherein said first protocol is an ISO protocol that pertains to smart cards, and said second protocol is a USB protocol.

31.   The user card of claim 29 wherein said microprocessor communicates signals using only said first set of contacts when operating in accordance with said first protocol.

REMARKS

In response to the Office Action dated July 6, 1999, Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 1-4, 8, 9, 11-20, 23 and 24. The indication that claims 5-7, 10, 21, 22 and 25 contain allowable subject matter is noted with appreciation. The rewriting of these claims in independent form is being held in abeyance, pending consideration of this response.

Claims 1-4, 8, 9, 11-20, 23 and 24 were rejected under 35 U.S.C. §103, as being unpatentable over the Renner et al patent in view of the Kenneth et al patent. It is

respectfully submitted, however, that these patents do not suggest the present invention to one of ordinary skill in the art, whether they are considered individually or in combination.

As discussed in detail in the application, the present invention is directed to a smart card system in which the card is capable of communicating with a variety of external devices that employ different respective communication protocols. Typically, smart cards communicate with card readers in accordance with one of the published ISO protocols, such as ISO 7816 for cards which contain external contacts. Thus, to communicate with one another, both the smart card and the reader must be ISO-compliant. In accordance with the present invention, a smart card is provided that is capable of communicating with both ISO-compliant readers and other devices which do not employ the ISO protocol for communications. For example, the card of the present invention can communicate with peripheral devices, such as a keyboard, using the PS/2 protocol. In another embodiment, the multi-protocol smart card of the present invention can communicate with a personal computer, using the USB protocol.

Pursuant to the invention, the smart card selectively communicates in accordance with the ISO protocol or one of the non-ISO protocols, such as PS/2 or USB, in response to the presence of a signal at a designated contact on the card. For instance, the ISO standard specifies signals that are presented to five contacts on the card. In one embodiment of the invention, a signal is detected at a sixth contact. If a designated signal is present at the sixth contact, the smart card's microprocessor communicates in accordance with a non-ISO protocol. However, if the designated signal is not present at the sixth contact, the microprocessor communicates in accordance with the ISO protocol.

This concept is brought out in each of the pending claims. For instance, claim 1 recites that a signal at the mode contact causes the microprocessor in the card to operate in accordance with a second protocol. Claims 11 and 15 recite that the card's microprocessor operates in accordance with a first protocol when the mode signal is not provided, and in accordance with a second protocol when the mode signal is provided. Claim 18 recites that the interface device, e.g. reader, includes a mode contact and a mode signal generator for causing a microprocessor in the user card to operate in accordance with a second protocol.

It is respectfully submitted that neither of the Renner et al nor Kenneth et al patents discloses a smart card having the capability to selectively communicate with different types of readers, using respectively different protocols. Rather, each of these two patents is directed to a smart card *reader* that can operate with different types of cards. In relevant part, the Renner et al patent discloses that smart cards vary in their support of certain functions, and the manner in which the functions are invoked. As described at column 8, lines 18-44, smart cards from one vendor may provide file based commands whereas those from another vendor may not provide such command. In another example, one smart card vendor may employ secure sessions to perform functions, whereas another may require the execution of multiple commands to perform an equivalent operation.

The Renner et al patent discloses a card reader that is capable of operating in a different mode in accordance with the type of card that is inserted in the reader. Referring to Figure 4, when the smart card 405 is inserted into the reader, vendor information is retrieved from the card. This vendor information is then used to select one of the sets of routines 403 that is appropriate for communicating with that particular card.

In all cases, however, the protocol that is employed to communicate between the smart card 405 and the reader conforms to the ISO standard. Note that Figure 4 depicts the ISO standard as the low level card protocol 404 that is used in the transport layer to communicate with the smart card 405. Throughout the specification, the patent refers to the use of the ISO standard to perform the communications. For instance, see column 1, lines 60-62; column 5, lines 47-57 (which describe the ISO reset procedure); column 8, lines 11-14 and 59-60; and column 9, lines 36-39.

From these portions of the disclosure, it can be seen that the Renner et al patent only contemplates a smart card that is capable of communicating in accordance with the ISO protocol. Nowhere does it suggest that the *card* can selectively employ different protocols to communicate with the reader. Rather, it only discloses that the *reader* has different operating modes that respectively conform to the cards of different vendors. In all cases, the different vendors' cards use the same protocol, namely the ISO protocol, to communicate with the reader.

In a similar manner, the Kenneth et al patent discloses a reader that is capable of communicating with different types of cards, namely magnetic stripe cards, contact cards, and contactless cards. In each of these cases, the cards themselves conform to the appropriate ISO standard. See, for example, column 2, lines 15-22. Nowhere does the patent suggest that the *cards,* as opposed to the reader, are capable of selectively operating in accordance with two or more different protocols. In particular, there is no suggestion that any single card is capable of operating in accordance with both an ISO protocol and a non-ISO protocol, such as PS/2 or USB.

In summary, it is respectfully submitted that neither of the Renner et al nor Kenneth et al patents discloses a smart *card* which is capable of selectively operating in accordance with at least two different communication protocols. Rather, each patent only discloses a *reader* that is capable of communicating with different types of cards. Accordingly, their combined teaching likewise cannot be interpreted to suggest a multi-protocol card.

For the foregoing reasons, it is respectfully submitted that claims 1-4, 8, 9, 11-20, 23 and 24 are patentable over the cited references, in addition to the claims that were indicated to be allowable. For these same reasons, it is respectfully submitted that new claims 26-31 are likewise patentable over the prior art of record.

Reconsideration and withdrawal of the rejection, and allowance of all pending claims are respectfully requested.

Respectfully submitted,

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